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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/612,431	07/02/2003	Richard L. Mahle	TI-34900 (1962-05300)	6527

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EXAMINER	
BREWSTER, WILLIAM M	

ART UNIT	PAPER NUMBER
2823	

DATE MAILED: 04/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

N/A

Office Action Summary	Application No.	Applicant(s)	
	10/612,431	MAHLE ET AL.	
	Examiner	Art Unit	
	William M. Brewster	2823	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 January 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) *8-15* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7 and 16-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of claims 1-7, 16-23 in the reply filed on 25 January 2005 is acknowledged.

Claims 8-15 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 25 January 2005.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 16, 17, 21, 23 are rejected under 35 U.S.C. 102(e) as being anticipated by Dias et al., US Publication No. 2003/0104679 A1.

Dias anticipates a method for treating an area of a semiconductor wafer surface to reduce surface irregularities and stress concentrations, comprising: in fig. 2, treating the area with a laser, wherein the treated area is melted by a laser beam and re-solidifes into a more planar profile, 124, p. 2, ¶ 24;

limitations from claim 16, a method comprising: in fig. 2 treating at least a portion of a scribe street on a semiconductor wafer surface, wherein the surface is melted and resolidifies into a more planar profile 124, thereby reducing stress concentrations on the surface; and in fig. 5, sawing through the treated portion, p. 3, ¶ 35.

limitations from claim 2, wherein the treated area is ablated by the laser beam, vaporizing at least a portion of the surface irregularities, fig. 2, at 124;

limitations from claim 17, wherein the wafer surface is melted by a laser, p. 2, ¶ 24;

limitations from claim 21, wherein treating the wafer surface immediately follows laser marking, fig. 2, after laser passes over 124, p. 2, ¶ 24;

limitations from claim 23, wherein the treated portion is on the backside of the wafer, fig. 4, p. 3, ¶ 35.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 3-7, 18, 19 rejected under 35 U.S.C. 103(a) as being unpatentable over Dias as applied to claims 1, 2, 16, 17, 21, 23 above, and further in view of Sun et al., US Publication No. 2003/0151053 A1.

Dias does not specify using all the industry standard lasers, but Sun does. Sun teaches:

limitations from claim 3, wherein the laser is a diode-pumped, charge-loaded laser (in a solid-state laser), p. 3, ¶ 47;

limitations from claim 5, wherein the laser is emits green laser light, p. 2, ¶ 27;

limitations from claim 6. The method of claim 4, wherein the laser emits infrared laser light, p. 5, ¶ 60;

limitations from claims 7, 19 wherein the laser is selected from a set consisting of an Nd:YAG laser, a frequency-doubled Nd:YAG laser, an excimer laser, a helium-neon laser, and a carbon-dioxide laser: Nd:YAG, p. 2, ¶ 47.

For limitations from claim 4, 18 wherein the laser is a soft-marking laser, any laser that affects the visible properties of the surface of the substrate is a marking laser. 'Soft' is inherently subjective or may be optimized.

Note that the specification contains no disclosure of either the critical nature of the claimed dimensions of any unexpected results arising there from. Where patentability is aid to be based upon particular chosen dimensions or upon another variable recited in a claim, the Applicant must show that the chosen dimensions are critical. In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to recognize that combining Sun's process with Dias's invention would have been beneficial because it gives the practitioner flexibility in using available laser technologies.

Claims 20, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dias as applied to claims 1, 2, 16, 17, 21, 23 above, and further in view of Voutsas et al., US Publication No. 2004/0140206 A1.

Dias does not specify treating the wafer immediately before marking, but Voutsas does. Voutsas teaches

limitations from claim 20, wherein treating the wafer surface immediately precedes laser marking;

limitations from claim 22, wherein the treated portion is on the active surface of the

wafer by laser cutting the substrates from a silicon ingot on both sides, p. 3, ¶ 48. Voutsas gives motivation in p. 3, ¶ 48. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to recognize that combining Voutsas's process with Dias's invention would have been beneficial because a laser gives the practitioner the option of cutting the substrate in more than one configuration.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William M. Brewster whose telephone number is 571-272-1854. The examiner can normally be reached on Full Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on 571-272-1855. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

William M. Brewster

4 April 2005
WB